

Education-Based Women's Empowerment through Family Medicinal Plants: A Study of the Empowerment Process in Samarinda, Indonesia

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ABSTRACT

The limited utilization of Family Medicinal Plants (TOGA) as a productive resource indicates the need for women's empowerment that not only improves knowledge and skills, but also develops the basis of entrepreneurial competencies through community education. This study aims to describe and analyze an education-based women's empowerment model in the utilization of TOGA through the stages of awareness, capacity building, and empowerment and its contribution to the development of women's entrepreneurial competencies. The study used a descriptive qualitative approach conducted in RT 05, Karang Asam Ulu Village, Sungai Kunjang District, Samarinda City. Data were collected through observation, interviews, and document studies with three informants selected by purposive sampling, then analyzed using the Miles and Huberman model and tested through triangulation of techniques and sources. The results show that the awareness stage builds understanding of the benefits and economic potential of TOGA, the capacity building stage increases knowledge and skills through training, practice, and mentoring, while the empowerment stage provides opportunities to apply abilities in TOGA management and group activities. This process shows the gradual development of entrepreneurial competencies, especially in recognizing economic opportunities and starting to try to develop simple products. However, production is not yet routine, and TOGA businesses, marketing, and management have not yet developed independently. These findings indicate the need for mentoring, processing and marketing training, as well as support in facilities and capital to develop entrepreneurial skills toward sustainable business activities.

Keterbatasan pemanfaatan Tanaman Obat Keluarga (TOGA) sebagai sumber daya produktif menunjukkan perlunya pemberdayaan perempuan yang tidak hanya meningkatkan pengetahuan dan keterampilan, tetapi juga mengembangkan dasar kompetensi kewirausahaan melalui pendidikan masyarakat. Penelitian ini bertujuan mendeskripsikan dan menganalisis model pemberdayaan perempuan berbasis pendidikan dalam pemanfaatan TOGA melalui tahapan penyadaran, pengkapasitasan, dan pendayaan serta kontribusinya terhadap perkembangan kompetensi kewirausahaan perempuan. Penelitian menggunakan pendekatan kualitatif deskriptif yang dilaksanakan di RT 05 Kelurahan Karang Asam Ulu, Kecamatan Sungai Kunjang, Kota Samarinda. Data dikumpulkan melalui observasi, wawancara, dan studi dokumen dengan tiga informan yang dipilih secara purposive sampling, kemudian dianalisis menggunakan model Miles dan Huberman serta diuji melalui triangulasi teknik dan sumber. Hasil penelitian menunjukkan bahwa tahap penyadaran membangun pemahaman mengenai manfaat dan potensi ekonomi TOGA, tahap pengkapasitasan meningkatkan pengetahuan dan keterampilan melalui pelatihan, praktik, dan pendampingan, sedangkan tahap pendayaan memberikan kesempatan menerapkan kemampuan dalam pengelolaan TOGA dan kegiatan kelompok. Proses tersebut menunjukkan perkembangan kompetensi kewirausahaan secara bertahap, terutama dalam mengenali peluang ekonomi dan mulai mencoba mengembangkan produk sederhana. Namun, produksi belum rutin dan usaha TOGA, pemasaran, serta pengelolaan usaha belum berkembang secara mandiri. Temuan ini menunjukkan perlunya pendampingan, pelatihan pengolahan dan pemasaran, serta dukungan fasilitas dan modal untuk mengembangkan kemampuan kewirausahaan menuju aktivitas usaha berkelanjutan.

Keywords: community education, empowerment process, family medicinal plants, women's empowerment

Introduction

Women's limited access to economic resources remains a challenge to improving family welfare, particularly in low-income communities. The national poverty rate, which stands at approximately 9.36%, or approximately 26.16 million people, demonstrates that economic issues remain a significant challenge to development (Hanifah et al., 2026). This condition is further complicated by women's limited access to education, training, and economic resources, which can hinder the achievement of economic independence (Febriyati, 2025). These limitations demonstrate that women's issues are not only related to economic conditions, but also to their ability to access, utilize, and develop the potential of available resources. Therefore, an empowerment approach is needed through education, training, utilization of economic resources, and support for business development that can strengthen women's knowledge, skills, and independence. These efforts enable women to actively participate in economic activities, improve family welfare, and reduce gender inequality in a sustainable manner (Sawitri et al., 2026). In this context, empowerment is not only aimed at improving economic conditions, but also as a learning process that can strengthen women's capacity to recognize potential, acquire skills, and gradually develop abilities.

From the perspective of community education, empowerment is understood as a learning process that aims to increase the capacity of individuals and groups to be able to recognize potential, utilize resources, and act independently to improve the quality of life (Kefi et al., 2022; Laila et al., 2021). Based on this perspective, women's empowerment in this study is understood as an educational process that is not only oriented towards economic improvement, but also towards strengthening women's knowledge, skills, and independence through the utilization of local potential. The empowerment process occurs in stages through awareness, capacity building, and empowerment. The awareness stage is aimed at fostering women's understanding and awareness of their conditions, potential, and opportunities that can be developed. The subsequent capacity building stage is carried out through a learning process aimed at increasing the knowledge and skills needed to manage this potential. Meanwhile, the empowerment stage is the process of providing women with the opportunity, trust, and space to apply the skills they have acquired more independently. These three stages demonstrate that education-based empowerment does not stop at providing knowledge and skills, but is a learning process that gradually strengthens women's capacity and independence.

This process can also serve as a foundation for developing entrepreneurial competencies, particularly in identifying economic potential and opportunities derived from local resources. Women's empowerment is a crucial strategy for strengthening family economic resilience while supporting community development focused on improving well-being (Rati et al., 2026). Through the empowerment process, women not only play the role of household managers, but also have the opportunity to develop creativity, increase independence, and manage productive activities sustainably (Mustangin, 2020). One of the local potentials that can be developed to support women's empowerment is Family Medicinal Plants (TOGA), namely medicinal plants cultivated by families in their home environment or on the surrounding land (Julianingsih et al., 2023). Various types of plants such as ginger, turmeric, and aloe vera are not only used as alternative natural treatments, but also play a role in increasing public awareness regarding the use of medicinal plants in everyday life (Aisyah, 2022; El-Yunusi et al., 2025). Utilization of TOGA can also be a means of empowering women through outreach, training, and mentoring activities that encourage women to develop local potential productively (Mutiaty et al., 2024). In the context of community education, these activities position TOGA not only as a resource to meet family health needs, but as a learning medium that provides opportunities for women to gain knowledge, develop skills, and build independence.

This potential can then be directed towards productive activities that support increasing family income as well as developing women's entrepreneurial competencies (Khikmah et al., 2025). However, optimal utilization of TOGA requires a continuous educational process through counseling, training, and mentoring so that women are able to manage TOGA appropriately and develop their potential productively (Lasmi & Putra, 2025). This shows that

community education has an important role in strengthening women's knowledge, skills, and independence in managing available resources (Kamil, 2024; Nurhayati et al., 2025). Thus, the use of TOGA through a community education approach can be an empowerment strategy that not only supports the fulfillment of family needs, but also builds the foundation of women's entrepreneurial competencies (Mustangin et al., 2021). Therefore, community education is an important foundation in implementing women's empowerment through the use of traditional medicine (TOGA).

Several community service articles have discussed empowerment through the use of Family Medicinal Plants (TOGA) with a diverse focus Nurfitriani & Fatmawati (2019), demonstrating that the use of TOGA through the Dasawisma group can increase community knowledge about medicinal plants and support family health maintenance Mohamad et al., (2023), shows that community empowerment through the use of science and technology-based medicinal plants can improve community skills in processing medicinal plants through the application of technology. Both studies indicate that the use of medicinal plants can be a means to improve community knowledge and skills. However, these studies focused more on improving knowledge, skills, health, and the application of technology, so the process of women's empowerment as a gradual process of community education and its relationship to the development of entrepreneurial competencies has not been a primary focus. This condition indicates the need to view the use of medicinal plants not only as an activity to improve knowledge and skills, but also as a learning process that builds women's capacity towards independence and recognition of economic opportunities.

Study Ramadhani et al., (2026), shows that community empowerment in the management of Family Medicinal Plants (TOGA) can take place through the stages of awareness, capacity building, and empowerment. These stages are carried out through socialization and participatory discussions, training and technical assistance, and providing opportunities for communities to manage TOGA independently until developing the results into products of economic value. These findings show that the empowerment stages can encourage increased knowledge, skills, and community independence. However, the study has not specifically explained how these three stages are positioned as a community education process that gradually connects learning activities with the development of women's entrepreneurial competencies. Thus, there is still room to understand how the awareness, capacity building, and empowerment stages not only produce technical capabilities in TOGA utilization, but also build women's knowledge, skills, independence, and abilities in recognizing and developing economic opportunities from local resources.

Based on previous research, an aspect that has not been sufficiently explained is how the stages of awareness, capacity building, and empowerment can be understood as a series of community education processes that gradually build women's entrepreneurial competencies through the utilization of local resources. This study fills this gap by analyzing the three stages of empowerment as a learning process that connects increased awareness, strengthening knowledge and skills, and providing opportunities to act independently with the development of women's entrepreneurial competencies. The contribution of this study lies in an empirical understanding of the process of education-based women's empowerment in the utilization of TOGA, specifically in showing how this process builds the foundation of entrepreneurial competencies through the recognition of economic potential and opportunities, even though it has not yet fully developed into an independent TOGA business. The implementation of women's empowerment through TOGA utilization can be found in the PKK and Dasawisma Pandan Wangi groups in RT 05, Karang Asam Ulu Village, Sungai Kunjang District, Samarinda City. Before the TOGA program was implemented, the use of yard land and medicinal plants by PKK members was still limited to meeting household needs and had not been directed as potential that could support the development of entrepreneurial competencies. Furthermore, members lack sufficient knowledge and skills to cultivate and develop medicinal plants into products with economic value, thus underutilizing their potential as a business opportunity. This situation highlights the need for an empowerment process that not only provides knowledge

and skills but also provides women with opportunities to manage and develop medicinal plants more independently.

After the TOGA program was implemented through the involvement of the PKK and Dasawisma groups with the support of the village government, members began to acquire knowledge and skills in cultivating and utilizing TOGA. The empowerment process became an important context to see how the stages of awareness, capacity building, and empowerment were applied in building women's entrepreneurial competencies through the utilization of TOGA. Based on this description, this study aims to describe and analyze the education-based women's empowerment model in the utilization of Family Medicinal Plants (TOGA) through the stages of awareness, capacity building, and empowerment, as well as its contribution in building the basis of women's entrepreneurial competencies in RT 05, Karang Asam Ulu Village, Sungai Kunjang District, Samarinda City.

Methods

This study uses a qualitative approach with a descriptive method to describe and analyze an education-based women's empowerment model in the use of Family Medicinal Plants (TOGA) to improve women's entrepreneurial competencies in RT 05, Karang Asam Ulu Village, Samarinda City (Creswell et al., 2022). The research was conducted in June 2026 in RT 05, Karang Asam Ulu Village, Sungai Kunjang District, Samarinda City. The selection of the research location was based on the implementation of the TOGA utilization program that involved the active participation of women through the PKK and Dasawisma groups, thus aligning with the research focus on women's empowerment and improving entrepreneurial competency.

Data collection techniques were conducted through observation, interviews, and document studies. Observations were conducted directly to obtain information regarding the implementation of the TOGA program and the forms of women's empowerment taking place at the research location. Informants were determined using a purposive sampling technique, namely selecting informants based on certain considerations by selecting individuals who are considered to know, understand, and be directly involved in the implementation of the TOGA program in accordance with the research focus (Sugiyono, 2020). Informant criteria include individuals who are involved in the implementation of the TOGA program, know and understand the empowerment process being implemented, are involved in or know the stages of awareness, capacity building, and empowerment, and are able to provide relevant information regarding the learning process, changes in knowledge and skills, and the development of women's entrepreneurial competencies.

Based on these criteria, the study involved three informants, namely the Head of RT 05, the Head of PKK, and a Facilitator involved in the implementation of the TOGA utilization program. The Head of RT 05 was chosen because he had knowledge of community conditions and program implementation in the RT 05 environment. The Head of PKK was chosen because he knew the implementation of PKK and Dasawisma Pandan Wangi activities and the involvement of female members in the TOGA program. The Facilitator was chosen because he was involved in the process of implementing empowerment activities through awareness, capacity building, and empowerment. Interviews were conducted in depth using a question guideline structured based on three stages of empowerment, namely awareness, capacity building, and empowerment. Questions were directed to obtain information regarding the implementation of the TOGA program, the role of women in each stage of empowerment, as well as changes in knowledge, skills, and entrepreneurial competencies obtained through TOGA utilization. The implementation of interviews was flexible following the flow of the discussion and was conducted two to three times to clarify and complete the information obtained.

Data sufficiency was determined based on the repeatability of information obtained from the three informants and its consistency with observation and documentation results. Data was deemed adequate when the information obtained adequately described the implementation of the three stages of empowerment in accordance with the research focus. Documentation studies were used as a complementary technique to strengthen data from observations and

interviews. Documents used in this study included documentation of outreach activities, training, mentoring, and utilization of traditional medicinal plants (TOGA), documentation of the types of TOGA plants cultivated, transcripts and recordings of interviews, and field notes obtained during the research process.

Data analysis in this study uses the Miles and Huberman model which includes data reduction, data presentation, and drawing conclusions interactively (Sugiyono, 2020). The analysis model was used to identify themes, patterns, and relationships between data that illustrate the education-based women's empowerment model in the utilization of traditional medicine (TOGA). Data analysis was also directed at identifying the stages and components of the empowerment model applied in TOGA utilization activities. The three stages of empowerment, namely awareness, capacity building, and empowerment, were determined from the outset as analysis categories based on the conceptual framework of empowerment used in the study. Data from interviews, observations, and documentation were then analyzed to describe activities, learning processes, changes that occurred, and their contribution to the development of entrepreneurial competencies at each stage.

Data from interviews, observations, and documentation were reduced according to the research focus, then presented in descriptive form to facilitate interpretation of the stages and components of the education-based women's empowerment model in the use of traditional medicine (TOGA). Furthermore, conclusions were drawn based on the interpretation of the entire research data to obtain a picture of the education-based women's empowerment model in the use of TOGA. The validity of the data was tested using technical triangulation and source triangulation (Denzin & Lincoln, 2017). Technical triangulation was conducted by comparing data obtained through interviews, observations, and document studies. Meanwhile, source triangulation was conducted by comparing information obtained from three informants to ensure the consistency and validity of the research data.

Result

Results Research on education-based women's empowerment in the use of Family Medicinal Plants (TOGA) in RT 05, Karang Asam Ulu Village, Sungai Kunjang District, Samarinda City is analyzed based on three stages of empowerment, namely awareness building, capacity building, and empowerment action. These three stages are used as a framework to identify educational activities, changes in knowledge and skills, and the development of women's entrepreneurial competencies in the use of TOGA. Based on the results of interviews, observations, and documentation, the empowerment process includes activities to identify community needs and potential, socialization, TOGA cultivation training, mentoring, introduction to TOGA economic potential, providing opportunities to apply abilities, and strengthening women's involvement in group sustainability.

The research findings were further grouped based on the three stages of empowerment. In the awareness stage, activities were conducted through socialization regarding the use of traditional medicinal plants (TOGA), aimed at providing an understanding of the benefits of plants, their use in daily life, and their economic potential. Information was disseminated through existing community activities, such as the Family Welfare Movement (PKK) and the Pandan Wangi Dasawisma (Dasawisma Pandan Wangi). These activities served as the initial step in building women's understanding that TOGA can not only be used to meet family health needs but also has the potential to be developed productively. This change in understanding regarding TOGA was evident in the statement by the PKK Chairperson, who previously viewed TOGA primarily as a plant for household needs.

The PKK Chairperson said, *"Before this program, I only knew TOGA as medicinal plants commonly grown in yards, like ginger, turmeric, and lemongrass. At the time, I didn't really understand that TOGA could also provide economic benefits for families."* This statement demonstrates a shift in utilization from a focus on family health needs to an understanding that traditional medicinal plants also have economic potential. This understanding was reinforced

through outreach programs that introduced the possibility of processing traditional medicinal plants into products with market value.

The PKK chair explained that information about the program was first obtained through outreach from the village office and then passed on to members through the PKK and Dasawisma groups. *"I first learned about this program through outreach from the village office. After that, the information was passed on to the PKK and Dasawisma administrators to be passed on to members in each neighborhood unit."* In addition to providing an understanding of the benefits and economic potential of TOGA, the awareness stage also demonstrated the emergence of women's interest and motivation to utilize it more productively. The information obtained encouraged women to see TOGA as a resource that can be used not only for household needs, but also as an opportunity for economic activity. Thus, the results of the awareness stage indicate the formation of an initial understanding of TOGA's potential and the beginning of a growing interest in TOGA-based opportunities. The capacity building stage is carried out through educational and training activities aimed at increasing women's knowledge and skills in TOGA cultivation and utilization. Learning activities are carried out through counseling, group discussions, questions and answers, direct practice, and mentoring. The material provided includes an introduction to the types and benefits of TOGA, planting and care techniques, utilization of plant products, and an introduction to TOGA-based business opportunities.

The facilitator explained that the learning process is not only carried out through delivering material, but also through direct practice so that participants can apply the knowledge they have acquired. *"The methods used are in the form of counseling, group discussions, questions and answers, and direct practice in planting, caring for, and utilizing TOGA plants so that participants can more easily understand the material."* Cultivation practices involved planting and caring for medicinal plants under the guidance of facilitators. During the activities, facilitators provided support when participants encountered difficulties applying the material. According to facilitators, skill development was primarily evident in participants' ability to cultivate and utilize the crops for daily needs. Some participants also began experimenting with processing medicinal plants into simple products.

The facilitator stated, *"Based on my observations, the participants' skills have improved, especially in cultivating traditional medicinal plants (TOGA) and utilizing plant products for daily needs. Some participants have also begun to try processing TOGA into simple products."* Mentoring is a crucial part of the capacity-building process because it helps participants apply the knowledge and skills they have acquired. Mentoring is provided in the form of guidance, motivation, and assistance when participants encounter difficulties. This process not only supports mastery of technical cultivation skills but also boosts participants' confidence in utilizing traditional medicinal plants (TOGA) more productively. In addition to developing cultivation skills, research results indicate an increased understanding of TOGA's economic potential. Participants are beginning to recognize that plants such as ginger, turmeric, and lemongrass can be processed into products with market value. However, the development of entrepreneurial competencies is still in its early stages. This is evidenced by production activities that are not yet routinely carried out and have not yet developed into independent TOGA-based businesses.

The facilitator stated, *"The training was quite helpful in broadening the participants' horizons regarding the various products that can be made from TOGA. Most participants are still in the experimental stage and have not yet started producing regularly."* The findings indicate that the capacity-building phase resulted in changes in knowledge, cultivation skills, the ability to recognize economic opportunities, and the courage to try cultivating traditional medicinal plants. However, the entrepreneurial competencies developed were still at a basic level because production was not yet routine and marketing capabilities, including the use of social media, were still limited. The empowerment phase was demonstrated by providing opportunities for women to apply the knowledge and skills acquired in the previous phase in managing traditional medicinal plants. At this stage, members were given space to care for plants, apply cultivation techniques, utilize traditional medicinal products, and participate in

group activities. The role of facilitators and PKK administrators was more directed at providing support, motivation, and direction when needed.

The PKK Chairperson explained the support provided to members as follows: "As Chairperson of the PKK, I provide support in the form of mentoring, motivation, and information on the use of traditional medicine. Furthermore, we continue to encourage women to utilize their yards to be more productive." Empowerment is also evident through member involvement in maintaining the continuity of activities, sharing experiences, and collaborating on TOGA management. Cooperation among members is one form of women's involvement in group activities.

The PKK Chairperson said: "In my opinion, cooperation between members is quite good. The mothers help each other during activities, share experiences, and provide each other with information regarding the cultivation and use of TOGA." In addition to involvement in group activities, research results indicate that the use of traditional herbal medicine (TOGA) is still primarily directed at household needs and group members. The harvest has not been widely marketed due to limited quantities. This situation indicates that the empowerment phase has provided space for women to apply the knowledge and skills acquired, but its application in entrepreneurial activities has not yet developed optimally. This limitation is also evident in the use of social media as a marketing tool. Some members are not yet accustomed to using social media to market their TOGA products, so marketing remains limited to their local community. Nevertheless, motivation to develop TOGA utilization remains evident through the understanding that TOGA not only provides health benefits but also offers the opportunity to provide additional income for the family. Therefore, the development of entrepreneurial competencies at the empowerment phase still requires further strengthening. This support is primarily needed in the form of advanced training, mentoring, production facilities, marketing, and capital support so that the skills acquired can develop from the stage of recognizing opportunities and testing products to more focused and sustainable business activities.

Table 1. Stages of Education-Based Women's Empowerment in Utilization TOGA

Empowerment Stage	Educational Activities	Changes Found	Entrepreneurship Competency Results
Awareness Building Stage	Socialization regarding the benefits, utilization, and economic potential of TOGA through PKK and Dasawisma Pandan Wangi activities	Women are beginning to understand that TOGA is not only used for family health needs, but also has economic potential, and interest and motivation are emerging to use it productively.	Initial ability to recognize the potential and economic opportunities of TOGA has emerged, as well as increasing interest in developing TOGA-based businesses.
Capacity Building Stage	Counseling, discussions, questions and answers, cultivation practices, mentoring, and introduction to TOGA-based processing and business opportunities	Knowledge about the types and benefits of TOGA increases; skills in planting, caring for, and utilizing TOGA improve, participants begin to try processing TOGA into simple products.	The development of basic entrepreneurial knowledge and skills, especially in recognizing business opportunities, developing product ideas, and the courage to try; production is not yet carried out routinely.
Empowerment Stage (Empowerment Action)	Providing opportunities to apply knowledge and skills, TOGA maintenance, group	Women apply knowledge in the cultivation and use of TOGA, work together, and share information and experiences.	Increased self-confidence, motivation, and readiness to develop a business; production, marketing, and business

	work, and support and mentoring		management capabilities are still limited
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Based on Table 1, the three stages demonstrate the relationship between educational activities and the development of women's competencies in the use of traditional herbal medicine (TOGA). The awareness stage plays a role in building understanding of the benefits and economic potential of TOGA. Furthermore, the capacity building stage strengthens knowledge and skills through counseling, practice, and mentoring. The empowerment stage provides opportunities for women to apply the acquired skills in real-life activities and maintain group involvement. The development of entrepreneurial competencies occurs in stages, starting from the ability to recognize economic opportunities, the emergence of product ideas, the courage to try, and increasing motivation to develop a business. However, this development has not yet reached the point of establishing an independent and routine TOGA business activity. Limitations in production, marketing, capital, facilities, and business management are aspects that still need to be strengthened so that the ongoing learning process can develop into a sustainable economic activity.

Discussion

The research results show that the education-based women's empowerment model for the use of Family Medicinal Plants (TOGA) in RT 05, Karang Asam Ulu Village, Sungai Kunjang District, Samarinda City, was implemented through three main stages: awareness, capacity building, and empowerment. The implementation of these three stages demonstrated the development of women's knowledge, skills, participation, and abilities in utilizing TOGA. These findings align with Qurratu'ain & Ali (2023), which shows that empowerment can increase the knowledge, skills, participation, and ability of the community in managing their potential. Based on the concept of community empowerment explained by Wrihatnolo and Dwidjowijoto as quoted in Awali et al., (2025), The empowerment process is carried out through three stages, namely the awareness building stage, the capacity building stage, and the empowerment action stage as an effort to build the community's ability to manage their potential. The results of this study are also in line with research Gabriella (2024), This demonstrates that empowerment through the use of traditional medicine (TOGA) can be implemented through stages of awareness, capacity building, and empowerment to support group members' ability to manage TOGA. This similarity demonstrates that empowerment through TOGA utilization is a gradual process. Capacity building does not occur immediately, but begins with the formation of understanding, followed by increased knowledge and skills, and then the application of these abilities in real-life activities.

Despite similarities in empowerment stages, this study shows more specific findings on the development of women's entrepreneurial competencies. Previous research has shown that TOGA empowerment can support groups' ability to manage TOGA, while this study shows that in the context of RT 05, this development is still in the early stages, primarily in the form of recognizing economic opportunities and having the courage to try simple products, and has not yet reached the stage of establishing a TOGA business that runs routinely and independently. The findings in the context of RT 05, Karang Asam Ulu Village, broaden the understanding of education-based empowerment, stating that the success of the empowerment process is not always demonstrated through the formation of independent businesses. The development of empowerment can also be seen through changes in understanding, the ability to recognize economic opportunities, increased skills, and the courage to try to develop products. These differences are related to the conditions of empowerment implementation in RT 05, namely limited harvests, production that is not yet carried out routinely, and limitations in marketing and business management.

The educational process through socialization, training, discussion, practice, and mentoring has helped women recognize TOGA not only as a plant used for family health needs, but also as a resource that has economic value. However, this development has not yet fully led

to the establishment of independent TOGA businesses. These findings indicate that education within the empowerment process can build initial entrepreneurial skills, particularly in recognizing economic opportunities and potential. However, developing these skills into sustainable business activities requires continued support and a process. Therefore, the following discussion is analyzed based on these three stages of empowerment.

Awareness Stage

The awareness-building stage is the initial stage in the community empowerment process, aimed at building community understanding, awareness, and motivation regarding their potential. At this stage, communities receive information, education, and learning experiences to identify local capabilities and resources that can be developed (Simabur et al., 2022). Thus, the awareness stage provides a foundation for communities to understand the conditions and potential available and fosters a willingness to participate in the empowerment process. From a community education perspective, the awareness process is part of the learning process that helps communities gain an initial understanding of environmental potential and its benefits before acquiring more practical knowledge and skills. Based on the research results, before implementing the empowerment program, the village government, along with the Family Welfare Movement (PKK) group, first identified community needs and local potential as the basis for developing a Family Medicinal Plant (TOGA) utilization program. Identifying needs is a crucial part of non-formal education because learning programs need to be tailored to the needs and conditions of the target community (Mustangin, 2020). In this study, identification was conducted to obtain an overview of community conditions and environmental potential that can be developed through the TOGA utilization program Sari et al., (2024), explains that identifying educational needs is related to efforts to understand the learning needs of the community so that programs can be tailored to the conditions and problems faced. This finding aligns with the implementation of this research, as the results of needs identification serve as a basis for determining the appropriate form of empowerment for the community's conditions.

Needs identification is carried out through observations of environmental conditions, yard use, and the activities of the PKK and Dasawisma Pandan Wangi groups to identify potential and problems within the community. Direct observation can be used to obtain a picture of the actual conditions of the community, which serves as the basis for program formulation (Adawiyah et al., 2026). In this study, observation was used to obtain initial information regarding environmental conditions and community activities as part of the needs identification process. Through these observations, the condition of yard land utilization, the existence of women's groups, and the potential and problems related to the utilization of TOGA were identified. The identification results showed that the community has potential in the form of yard land that can be utilized for TOGA development, but its utilization is still not optimal and has not been directed as a potential that can support the development of women's entrepreneurial competencies. These findings were then considered in determining the TOGA utilization program in RT 05, Karang Asam Ulu Village.

The results of identifying these needs then become the basis for determining the form of empowerment that is appropriate to the conditions of the community Mustangin et al., (2021), explained that needs identification is necessary to ensure that planned programs align with community needs and can be implemented appropriately. In this study, the identification results guided the implementation of the TOGA utilization program, which began with outreach to the PKK and Dasawisma Pandan Wangi groups. Thus, needs identification not only provides a picture of the community's conditions and potential but also serves as a basis for determining the direction of educational and empowerment activities provided to women.

a. Socialization for the Delivery of Information Regarding TOGA

Socialization is one of the activities in the awareness stage carried out to provide initial information to the community about the Family Medicinal Plant (TOGA) utilization program. This activity is the first step in introducing the program, explaining its objectives, and encouraging women to participate in its implementation. This is in line with research

Fitriawati et al., (2021), which explains that socialization is part of the awareness-raising stage because it serves to convey initial information about empowerment activities to the community. In this study, socialization was conducted through existing community groups, specifically PKK and Dasawisma activities. Utilizing existing groups as learning spaces allows for direct information delivery and alignment with community interaction patterns. This condition demonstrates the characteristics of non-formal education, which utilizes the community environment as a venue for the learning process. This is in line with Yunika et al., (2022), that community education can be implemented through activities tailored to the conditions and needs of the community. These activities are carried out by the PKK and Dasawisma Pandan Wangi administrators, along with assistants as facilitators, through group meetings established within the community. Information is delivered through direct communication with members, utilizing community gatherings, such as PKK activities, mutual cooperation, religious study groups, and exercise.

Utilizing existing community groups can provide a space to carry out empowerment activities while reaching out to the community in conveying program information (Mustangin, 2017). In this study, the activity became an interactive space to convey information about the TOGA utilization program without having to form a new forum. The statement shows that before participating in the program, TOGA was understood more as a plant used to meet family health needs. After obtaining information about the program, this understanding developed with the emergence of knowledge that TOGA can also be developed into products that have economic value. The PKK Chair also explained that information about the program was first obtained through socialization from the village, then conveyed to the PKK and Dasawisma administrators to be passed on to members.

These findings indicate that the awareness-raising process in this study was not only related to the addition of information about traditional medicine (TOGA), but also a change in women's perspectives on the potential available in their residential environment. TOGA, previously understood primarily for its health benefits, began to be viewed as having the potential to be developed into products with economic value. This change in understanding represents the initial development of entrepreneurial competency, particularly in the ability to recognize opportunities (opportunity recognition). However, at this stage, this ability is still at the level of recognition and awareness of economic opportunities and has not yet demonstrated the formation of independently managed TOGA businesses. From a community education perspective, these findings indicate that the educational process in empowerment does not stop at providing information, but plays a role in building community awareness of potential that was previously not widely understood Kamil (2024), explains that community education plays a role in increasing community awareness and capacity through a learning process tailored to the needs of their environment. In the context of this research, providing information about the benefits and economic potential of traditional herbal medicine (TOGA) serves as an initial learning experience that helps women understand that local resources can be utilized not only for household needs but also have the potential to be developed productively.

The use of PKK and Dasawisma groups as information delivery platforms also supports this process. Information can be delivered through familiar interaction spaces within the community, allowing women not only to receive information individually but also to interact within a group setting Ramadhani et al., (2026), demonstrating that the active involvement of group members in empowerment activities can support the ongoing empowerment process at the community level. In this study, the presence of the PKK and Dasawisma Pandan Wangi groups provided a space for administrators and facilitators to convey information about the program while encouraging women's involvement in TOGA utilization activities. Thus, the awareness-raising stage through needs identification and outreach serves as the foundation for implementing education-based empowerment. Needs identification provides a snapshot of the community's conditions and potential, while outreach helps build women's understanding and awareness of the benefits and economic

potential of traditional medicinal plants (TOGA). The shift in understanding from TOGA as a plant for health needs to recognizing TOGA as a potential economic resource demonstrates that early education has fostered awareness of the opportunities that can be developed. This awareness then forms the basis for the capacity-building stage, which involves developing women's knowledge and skills through training, practice, and mentoring.

Capacity Building Stage

The capacity building stage is an empowerment process that aims to increase community capacity through knowledge and skills that can be applied in managing existing potential (Simabur *et al.*, 2022). Capacity building is not only oriented toward imparting knowledge, but also providing learning experiences so that communities can develop skills and apply them according to their needs and available potential. This process positions communities as participants who gradually gain the ability to manage environmental potential more independently (Awali *et al.*, 2025). This suggests that the capacity-building process needs to provide learning experiences that enable communities not only to understand the knowledge provided but also to apply it according to their needs and potential. In this study, the capacity-building stage was realized through training on TOGA cultivation and mentoring in TOGA management as a learning process to improve women's knowledge and skills in utilizing available potential.

a. Cultivation Training TOGA

The TOGA cultivation training is a capacity-building activity aimed at improving women's knowledge and skills in managing Family Medicinal Plants (TOGA). This activity serves as a learning process for members of the Family Welfare Movement (PKK) and the Pandan Wangi Dasawisma (Family Welfare Movement) to understand TOGA cultivation, maintenance, and utilization techniques. The TOGA cultivation training can improve community understanding and skills in planting and caring for medicinal plants in their yards Prakoso *et al.*, (2025), This demonstrates that training can be a learning tool that develops practical skills in the community in managing medicinal plants. Furthermore, training in the cultivation and processing of traditional medicinal plants can be used to optimize community skills in utilizing medicinal plants available in the surrounding area (Karomah *et al.*, 2024). TOGA education and training also improve the community's knowledge, skills, and attitudes in the proper use of medicinal plants (Choironi *et al.*, 2019). These findings reinforce the point that training serves not only as a means of conveying information but also as a learning experience that can be directly applied. In this study, training is positioned as a learning process that provides women with knowledge and practical experience in managing traditional medicine (TOGA).

The learning activities were carried out through material delivery, group discussions, questions and answers, and hands-on practice. The facilitator presented material on types of medicinal plants, the benefits of TOGA for family health, how to utilize them in daily life, and the potential of TOGA as a resource that can be developed. The discussion and questions and answers provided an opportunity for members to interact with the facilitator, share experiences, and ask questions related to TOGA. After gaining an initial understanding, members were given the opportunity to practice TOGA cultivation directly so that the knowledge gained could be applied through learning experiences. The use of hands-on practice is in accordance with the characteristics of community education which emphasizes learning through experience and participant involvement Yunindra & Kriswanto (2024), explains that learning through practice provides participants with the opportunity to gain hands-on experience so they can apply the knowledge gained. In the context of this research, hands-on practice is a crucial part of capacity building because women not only gain information about traditional medicinal plants but also begin to gain experience in cultivating and utilizing them.

The results of the study indicate that women's skills in the cultivation and utilization of traditional medicinal plants (TOGA) have improved. The facilitator stated that participants' skills have improved, particularly in TOGA cultivation and the utilization of plant products for daily needs. Some participants have also begun to try processing TOGA into simple products, although most are still at the trial stage and have not yet produced them routinely. These findings indicate that the learning process has resulted in a shift from knowledge to initial skills, but these skills are still in the development stage. This condition is understandable because capacity building is a gradual process. Knowledge gained through counseling and discussions needs to be reinforced through practical experience and mentoring so that skills can be applied consistently. In the context of the study in RT 05, Karang Asam Ulu Village, women's skills have begun to develop in the cultivation and utilization of TOGA, but have not yet fully developed into routine production activities. Thus, educational activities at the capacity building stage have provided a foundation for practical skills, but further learning and mentoring are still needed to strengthen their application.

b. Assistance in Management TOGA

Mentoring is a follow-up activity after training, designed to help members apply the knowledge and skills they have acquired in managing traditional medicinal plants. Mentoring is provided by facilitators and PKK administrators through monitoring plant development, providing guidance on maintenance, and discussing challenges members face during cultivation. Mentoring in community empowerment can strengthen individual capabilities through support, direction, and motivation, enabling communities to better develop their potential (Fitriawati et al., 2021). This shows that mentoring functions as a strengthening process after the community has acquired knowledge and skills through learning activities.

In this study, mentoring was provided when members encountered difficulties in planting, maintaining, and managing TOGA. Facilitators and PKK administrators provided direct guidance on how to address issues encountered during the cultivation process. Mentoring was also provided through communication and discussions regarding plant development, ensuring members received assistance tailored to their specific circumstances. This form of mentoring demonstrates that facilitators do not take over members' activities but rather provide support so that members can apply the skills they have learned. Based on the research findings, mentoring helped members apply cultivation techniques acquired during training and fostered confidence in TOGA maintenance. Member involvement in plant management demonstrates that the skills acquired through training are beginning to be applied in TOGA management activities. Thus, mentoring complements training activities by providing reinforcement and assistance throughout the skill application process.

c. Development of Women's Entrepreneurship Competencies

Entrepreneurial competency development is part of a capacity-building process aimed at empowering women to recognize and utilize the potential of traditional medicinal plants as a productive resource. Through training and mentoring, members not only gain skills in cultivating medicinal plants but also begin to recognize the economic benefits that can be derived from these products. Utilizing local potential in empowerment can provide communities with experience in recognizing opportunities in their surroundings and developing these resources productively. In this study, the use of traditional medicinal plants provided women with the experience of recognizing that cultivated plants can not only be used for family health needs but also have the potential to be developed into resources with economic value.

The research results show that members are beginning to understand the potential of utilizing traditional medicinal plants (TOGA) as raw materials that can be developed into products with economic value. This understanding is gained through the learning process

of training and mentoring, which introduces the benefits of TOGA and the possibility of developing it as a potential business. Utilizing TOGA as a local resource can be a basis for introducing economic opportunities to the community by increasing knowledge and skills in its management (Khikmah et al., 2025). In this study, this process is evident from the emergence of members' understanding of the possibility of utilizing TOGA not only for household needs, but also as a resource with productive value.

This situation demonstrates the development of women's ability to recognize opportunities and identify potential resources that can be developed. However, at this stage, the development of entrepreneurial competency is still limited to recognizing opportunities and understanding the economic potential of TOGA, thus not yet demonstrating any independent business activities. Nevertheless, some members have begun to try developing simple TOGA products, but these activities are not yet carried out routinely. Therefore, empowerment-based education does not directly result in independent businesses, but rather develops entrepreneurial competency gradually. This development begins with changes in understanding and the ability to recognize TOGA economic opportunities, then progresses to skills and experience in product testing. Education and training in empowerment can be a means to increase community capacity by strengthening knowledge, skills, and abilities to develop independentl (Kamil, 2024). In the context of this research, this learning process serves as a foundation for women to begin viewing traditional herbal medicine (TOGA) as a local potential that can be utilized not only for family health needs but also for productive activities and entrepreneurial development.

Empowerment Stage

The empowerment action stage is the stage where communities are given the opportunity to apply the knowledge and skills they have acquired to manage their existing potential. This stage positions communities as actors who have the space to apply their abilities, take on roles, and carry out activities based on their existing capabilities. This aligns with Mardikanto & Soebianto (2012), which explains that empowerment is carried out by providing opportunities for communities to use acquired skills to develop their potential. In this study, the empowerment stage is demonstrated through the involvement of PKK and Dasawisma Pandan Wangi members in applying the learning outcomes from the awareness and capacity building stages to manage traditional herbal medicine. This finding is in line with Suhartini et al., (2022), which shows that the empowerment process based on women's home product processing skills ends with a stage of independence through mentoring and empowerment so that the group is able to manage activities more independently.

In the utilization of traditional medicine (TOGA) in RT 05, Karang Asam Ulu Village, the empowerment process was carried out by giving members of the Family Welfare Movement (PKK) and Dasawisma Pandan Wangi the trust to apply the knowledge and skills they had acquired through previous activities. Members began to gain the space to manage TOGA based on their abilities, while facilitators and group administrators provided guidance and support when needed. This finding aligns with research conducted by the Indonesian Institute of Sciences (IIA) Astuti et al., (2022), which shows that in the empowerment phase of the women's empowerment program based on plant cultivation skills, the role of the facilitator shifts from implementer to facilitator and evaluator of the activities carried out by members. This condition indicates a change in the role of the community from being a participant in activities to one that begins to apply knowledge and skills in TOGA management. Thus, empowerment in this study is evident in the opportunities for women to apply learning outcomes directly through TOGA management activities.

The empowerment process is also supported by the group's role in maintaining the sustainability of TOGA utilization activities. The PKK and Dasawisma Pandan Wangi administrators play a role in coordinating activities, encouraging member involvement, and building collaboration in plant maintenance. This aligns with research Pitasari et al., (2023), which shows that the sustainability of local potential-based empowerment programs is

determined by the role of group administrators in coordinating activities and maintaining member engagement. In addition to group support, program organizers also provide supporting facilities in the form of land and polybags used in cultivation activities. This support facilitates members in applying the skills they have acquired and supports the sustainability of TOGA utilization activities. Although there has not been a specific TOGA cadre formation, the role of PKK and Dasawisma administrators as group motivators is one form of institutional support in maintaining the sustainability of activities, in line with research Astuti et al., (2022), regarding the role of group drivers in maintaining the sustainability of empowerment activities based on cultivation skills. Based on the research results, the empowerment stage is demonstrated not only through the application of TOGA cultivation skills but also through providing trust and opportunities for members to take on roles in TOGA management with group support. These findings indicate that empowerment is a stage that connects learning outcomes with real-life applications in community life. Thus, the empowerment stage in community education-based empowerment plays a role in providing space for women to apply the skills they have acquired and build experience in managing local potential.

a. Providing Opportunities for Communities to Manage TOGA Independently

Providing opportunities for the community is a crucial part of the empowerment phase because it provides members with the space to apply the skills they have acquired during the empowerment process. This aligns with research Mustangin (2020), which explains that local resource-based empowerment through non-formal education provides women with the opportunity to apply the knowledge and skills they have learned as part of the empowerment process. In this study, this opportunity is reflected in women's involvement in independently managing and utilizing traditional herbal medicine (TOGA) based on the knowledge and skills they have acquired during the empowerment process. In this study, these opportunities were realized through member involvement in plant maintenance, TOGA management, and the application of learned cultivation techniques. After acquiring information through outreach activities and knowledge and skills through training and mentoring, members began to assume responsibility for direct involvement in TOGA management.

At this stage, the role of facilitators and PKK administrators was more directed toward providing support and direction when needed. This situation, as explained by Mustangin et al., (2021), that increasing community capacity through non-formal education is aimed at gradually reducing the role of facilitators as the target group's independence increases. Members are empowered to apply the knowledge they have acquired in their daily activities, including plant maintenance based on their acquired skills. This demonstrates that the empowerment process provides members with the opportunity to learn through experience and directly apply their skills. This is in line with Mardikanto & Soebianto (2012), which explains that empowerment is carried out by providing opportunities for communities to develop and utilize their existing skills. In this study, this opportunity is seen through the involvement of members as implementers in TOGA management activities. With this involvement, members not only play a role as participants in activities directed by the facilitator, but also begin to apply the skills they have acquired in plant management. Thus, providing opportunities in the empowerment stage is a form of empowerment process that provides women with experience in applying the knowledge and skills they have acquired in TOGA management.

b. Strengthening the Independence of Women's Groups

In addition to providing members with opportunities to manage TOGA, the empowerment phase also involves strengthening the capacity of women's groups to maintain their activities. This group's capacity is demonstrated through members' involvement in ensuring the continuity of activities, coordinating activities, sharing cultivation experiences, and fulfilling plant maintenance *responsibilities*. This aligns with research Pitasari et al., (2023), which demonstrates that the group's ability to implement

local potential-based empowerment programs is formed through role allocation, coordination among members, and sharing experiences in carrying out activities sustainably. This process demonstrates that TOGA management does not only depend on individual abilities but also requires cooperation among group members. In its implementation, the PKK and Dasawisma Pandan Wangi administrators act as group motivators by coordinating activities and encouraging members to remain involved in TOGA management.

The role of the administrators is more focused on providing support and organizing the group, while members are given the space to carry out activities based on their acquired skills. This situation demonstrates efforts to build group capacity through the division of roles and responsibilities in TOGA utilization activities. The sustainability of activities is also supported by the program organizers through the provision of facilities such as land and polybags, as well as facilitation during the implementation of activities. This is in line with Suhartini et al., (2022), which shows that the provision of support facilities and mentoring at the final stage of empowerment can contribute to the sustainability of women's group activities after the training ends.

This support is a key factor in the group's ability to maintain its TOGA cultivation activities after receiving training and mentoring. Although no specific TOGA cadres have been formed, the presence of PKK and Dasawisma administrators, who continue to coordinate activities, is one form of support the group provides in maintaining the program's sustainability. This aligns with Mardikanto & Soebianto (2012), which explains that empowerment can develop when communities are given the opportunity to utilize their abilities and are provided with an environment that supports the process of independence. Strengthening community groups is carried out by providing spaces for communities to study and develop TOGA independently through established local groups. Educational efforts to achieve independence are carried out by providing opportunities for communities to carry out the learning process independently. Learning independence is one factor that plays a role in determining the ability to face various challenges and achieve learning outcomes (Hudaya et al., 2024). In the educational process, independent learning is an important part of achieving community learning independence.

Conclusion

Based on the research results, the education-based women's empowerment model in the utilization of Family Medicinal Plants (TOGA) in RT 05, Karang Asam Ulu Village, Sungai Kunjang District, Samarinda City was implemented through three stages, namely awareness, capacity building, and empowerment. The awareness stage builds women's understanding of the benefits and economic potential of TOGA, the capacity building stage increases knowledge and skills through training, practice, and mentoring, while the empowerment stage provides opportunities for women to apply their abilities in TOGA management and group activities. The education-based empowerment process contributes to the gradual development of women's entrepreneurial competencies, especially in recognizing economic opportunities, understanding TOGA's potential as a productive resource, and starting to try to develop simple products. However, the development of entrepreneurial competencies is still at an early stage because production has not been carried out routinely and business activities, marketing, and business management have not developed independently. The main contribution of this study shows that the success of education-based empowerment is not always marked by the formation of independent businesses, but can also be seen from the gradual development of entrepreneurial capabilities from changes in understanding, recognizing opportunities, to the courage to try to develop products. Practically, the sustainability of the program needs to be supported through continued mentoring, processing and marketing training, strengthening of production facilities, and capital support tailored to the group's conditions. This strengthening is necessary so that the acquired skills can develop from the opportunity recognition stage to the implementation of more consistent economic activities. This study has limitations in the research context, which focuses on a single community group in RT 05 and the development of entrepreneurial

competencies that are still in the early stages, so it cannot describe the process of establishing a sustainable TOGA business. Future research can examine in more depth the transition from the introduction of entrepreneurial concepts and opportunities to actual TOGA business activities, including production processes, marketing, business management, and the sustainability of economic activities.

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